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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,806	07/30/2003	Miwa Kozawa	030923	9494

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

LEE, SIN J

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,806

Applicant(s)

KOZAWA ET AL.

Examiner

Sin J. Lee

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. *Upon reconsideration*, previous 103(a) rejection on claims 1-9, 12 and 14-21 over Ishibashi et al'657 in view of Vasta'870 is hereby withdrawn. It is the Examiner's position that one skilled in the art would not have been motivated to use Vasta's bicyclic amidine compound in Ishibashi's second resist material because Vasta's composition is used as a primer or topcoating for metal substrates or as a coating for electrodes used in electrochemical reactions such as grids used in lead acid storage batteries whereas Ishibashi's second resist is used for thickening a resist pattern.
2. In view of new ground of rejection, the following rejections are made non-final. The Examiner sincerely apologizes for any inconvenience caused by this.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation "the resin containing an aromatic compound in a portion thereof is . . . " in the last two lines. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

Art Unit: 1752

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-9, 12 and 14-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishibashi et al (US 6,579,657 B1).

In col.2, lines 38-57, Ishibashi teaches a method for manufacturing a semiconductor device: A first resist pattern is formed from a first resist (a mixture of novolac resin and a naphthoquinonediazide photosensitive agent) on a semiconductor base layer. A second resist is formed on the first resist pattern which generates crosslinking reaction in the presence of an acid. A crosslinked film is formed at a portion of the second resist contacting with the first resist pattern by the agency of an acid fed from the first resist pattern. Non-crosslinked portions of the second resist are removed (i.e., developed) to form a second resist pattern. Finally, the semiconductor base layer is subjected to etching through the second resist pattern used as a mask.

Specifically, in his Example 11, Ishibashi teaches a second resist (which is used as a resist pattern thickening material) which contains *polyvinyl acetal* (a water-soluble resin), (N-methoxymethyl)methoxyethyleneurea (a crosslinking agent), (N-methoxymethyl) hydroxyethyleneurea (a crosslinking agent), *N-methoxymethylurea* (a crosslinking agent) and *pure water*. N-methoxymethylurea ($\text{NH}_2\text{-C(=O)-N(H)-CH}_2\text{OCH}_3$)

also teaches present nitrogen-containing compound. Thus, Ishibashi teaches present inventions of claims 1-4, 8, 9 and 16-21.

Ishibashi teaches (col.9, line 6-12) that in order to improve the film-forming properties, surface active agents such as non-ionic polyoxyethylene nonylphenyl ether type surfactant can be added to the second resist material. Therefore, Ishibashi teaches present inventions of claims 5-7.

With respect to present claim 12, Ishibashi teaches that his water-soluble resin (which examples include polyvinylacetal as well as styrene-maleic acid copolymer) for the second resist can be used singly or in combination of two or more. Based on this teaching, one skilled in the art would readily envisage using styrene-maleic acid copolymer in addition to the polyvinyl acetal in Ishibashi's Example 11 as his water soluble resins. Therefore, the prior art teaches present invention of claim 12.

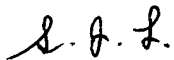
With respect to present claims 14 and 15, Ishibashi teaches (col.9, lines 14-22) that the solvents for the second resist may be water and alcoholic solvents such as isopropyl alcohol. Therefore, the prior art teaches present inventions of claims 14 and 15.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

Art Unit: 1752

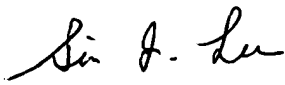
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee

April 21, 2006


SIN LEE
PRIMARY EXAMINER